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The Unbounded and Social Mind: Dewey on the Locus of Mind

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Abstract

In the recent debate concerning the boundary of mind, the extended mind thesis (EMT), which states that our mind and cognition are extended into the environment, is influential as an antithesis to the internalist (or Cartesian) view, according to which mind and cognition are in the head. However, EMT has some serious difficulties. On the contrary to its proponents' claim, EMT contributes neither to demystifying the mind, nor to promoting our understanding of cognition. Moreover, it leads to an extreme kind of individualism by regarding environmental resources as constituents of individual human minds. After showing this, I explore an alternative anti-Cartesian picture of mind through citing Dewey's view of the locus of mind. Although the proponents of EMT often invoke Dewey as a pioneer of their view, his view is in fact the one that should be called the 'unbounded mind' rather than the 'extended mind'. Furthermore, I show that Dewey's view indicates a root to overcome the individualistic dogma that is shared by internalists and the EMT theorists.

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INTRODUCTION

In this paper, I address the question 'where does the mind stop, and the rest of the world begin?' [Clark 1997: 213; Noë 2004: 221; see also Wilson 2004: 3]. The standard answer to this 'boundary of mind' question has been the internalist (sometimes called 'Cartesian') view, according to which mind is (or at least realized solely by) brain and hence it is in the head. In a recent debate, though, many theorists propose *the extended mind thesis* (EMT) that mind is extended into the environment, and it has become influential as an antithesis to internalism. EMT is submitted as part of a solution to the mind-body problem. For example, Clark [2003] proposes to reconstruct the mind-body problem as the 'mind-body-*scaffolding* problem', or 'the problem of understanding how human thought and reason is born out of looping interactions between material brains, material bodies, and complex cultural and technological environments' [ibid.: 11]. The proponents of EMT such as Clark aim to 'naturalize' mind by locating it in the physical world, just as most contemporary internalists do.[i] Nevertheless, the former does not try to locate it in the head, but in a wider region of the physical world: the region made up of body and environment in addition to brain. At the same time, EMT is intended to provide better explanatory methods for cognitive science, and so promote our understanding of cognition.

However, as I see it, EMT doesn't contribute to achieving its proponents' goals. Above all, as I will show below, it is hard to understand why relocating the boundary of mind somewhere outside of skull and skin serves to solve the mind-body problem. Moreover, it is unclear how seeing the mind as extended contributes to our understanding of cognition. In addition, EMT paradoxically leads to an extreme kind of individualism by regarding external

resources as constituents of individual human minds.

On this background, I will explore the possibility of an alternative anti-Cartesian picture of mind through citing Dewey's philosophy of mind. Although the proponents of EMT often invoke Dewey as a pioneer of their view, Dewey's view is substantially different from EMT. I will argue that Dewey's view is the one that should be called the 'unbounded mind' rather than the 'extended mind'. Though his proposal cannot be easily introduced in the metaphysical framework that contemporary theorists adopt, I believe that we can get some morals from it. I will suggest that the boundary of mind debate neglects an antithesis to Cartesianism that is more radical than EMT. Moreover, Dewey's view indicates a root to overcome the individualistic dogma that is shared by both internalists and the EMT theorists.

1. A CASE AGAINST THE EXTENDED MIND

The proponents of EMT hold that some of our mental states or processes are partly constituted by environmental entities or events. For example, they claim that, when I calculate by writing on a paper, my thinking process occurs partly on the paper [cf. Wilson 1994]; if I always carry a notebook or accompany a partner, my belief state lies partly on the notebook or in the partner's location [cf. Clark & Chalmers 1998]; or, when I move and look around, my visual experience occurs partly in the surrounding environment [cf. Noë 2004].[ii]

I find that the boundary of mind debate is deeply confused, and that one major source of this confusion is the loose and inflationary use of the term 'extended mind'.[iii] Therefore, I set two conditions on EMT. First, any version of EMT must be 'vehicle externalism' [Hurley 1998], according to which

physical *vehicles* of some mental events or states are partly located in the environment. Second, any version of EMT must be a thesis about *individual human minds*. According to EMT, mental states or processes of individual human agents are extended. It should be distinguished from the thesis that *groups of individual agents* or *groups of individual agent(s) and instrument(s)* have some cognitive states or processes that are not confined to any individual organism. (I will formulate the latter thesis as 'the socially distributed cognition theory' below.) These conditions might exclude some theorists who call themselves the 'proponents of EMT' from the EMT camp. Nevertheless, there also are a certain number of theorists [e.g. Clark & Chalmers 1998; Noë 2004; Menary 2007] who defend the position that is properly qualified as EMT in the above sense[iv]. Especially, Clark [2003] enthusiastically claims that we, individual human agents, are 'natural-born cyborgs', whose minds are partly constituted by technological resources that are externally located.

As I see it, EMT as thus formulated is unpromising. This is partly because it doesn't contribute to achieving its proponents' goal. One of the EMT theorists' aims is to *demystify* the mind. They argue that regarding the brain as the sole seat of mind leads to the erroneous view that skin and skull are *mysterious* boundaries ('magical membrane' [Hurley 1998]) and the brain is a *mysterious* matter ('magic dust' [Clark 2008]). For example, Noë accuses contemporary neuroscientists who adopt internalism of committing such an error. He says:

> They treat the mind as standing to the body as a pilot does to his ship and they deceive themselves into thinking they've eliminated mystery because they use the word "mind" to refer to the brain. The brain, thought of in this

> way, is less material mind than spiritualized matter; instead of eliminating the mystery from the mental, they've simply concocted a mysterious account of the physical. [Noë 2004: 215]

> But why should we think that the boundary formed by the limits of brain is special when compared with other boundaries that can be drawn inside the brain …? … [T]he skull is not a *magical membrane*; why not take seriously the possibility that the causal processes that matter for consciousness are themselves *boundary crossing* and, therefore, world involving? [Noë 2009, p.49, original emphasis]

However, this seems to be a straw man argument: with only few exceptions (such as Searle [1980]), most of contemporary internalists don't claim that neural stuff has some mysterious intrinsic property that makes the brain the sole seat of mind. Instead, they hold that the information flow inside skin and skull satisfies a certain functional condition about informational access that the information flow beyond them doesn't, and that such a condition matters for determining the boundary of mind[v]. Moreover, it is hard to understand why identifying the brain as the locus of mind would lead to regarding skin and skull as 'magical membrane'. To see this, let's compare thinking with blood pumping: identifying the heart as the locus of pumping in blood circulation doesn't lead to regarding the pericardium as a magical membrane. If so, why can't we think about the locus of thinking in the same way?

Another aim of the EMT theorists is to call our attention to the need to focus on interaction among brain, body, and

environment in order to understand cognition. They insist that internalists underestimate bodily and environmental contributions to cognitive activity. For, on this conception, all body and environment do is to provide inputs to and to receive outputs from mind. Along this line of thought, Menary says:

> 'If cognition is bounded by the brain, why do we not complete all these cognitive tasks [solving mathematical problems and rotating the shapes on the screen in Tetris], and many others like them, "in the head?"' [Menary 2007: 3].

However, this argument is unconvincing. In the present passage, Menary presupposes that any factor that plays some significant role in accomplishing some cognitive task must be a constituent of cognition. This is not the case. Explanations of intelligent behaviours invoke not only factors that *constitutively* contribute to cognition, but also factors that *merely causally* contribute to it. And the latter factors can be explanatorily as significant as the former [cf. Rupert 2004; Sprevak 2010]. While denying that the environment constitutes cognitive processes, internalists can concede that the environment *facilitates* our cognitive processes by continuously providing inputs through bodily interaction during processing. Hence we can admit, without accepting EMT, that understanding cognition requires us to take interaction among brain, body, and environment into account. Then, in what respect is EMT explanatorily superior to internalism? To my knowledge, EMT theorists offer no convincing answer to this question.[vi]

Furthermore, by regarding external resources as parts of individual human minds, EMT leads to an extreme (and harmful) kind of *individualism*[vii]. This is clearly shown in

cases of group problem solving. The EMT theorists [e.g. Clark & Chalmers 1998] claim that such cases can be explained on the basis of EMT, too. According to their '*socially* extended cognition' thesis, each of our minds can be extended not only to tools, but also to other agents. Suppose that I solve complex mathematical problems through relying on another agent *A*. EMT says that *A* is a constituent of my thinking process. However, if that were the case, the problem-solving behaviour could be explained by appealing *only* to my cognitive processes, as if I solved the problem *alone*. This way of explanation misses the fact that I solve the problem *together with A*.

The EMT theorists might reply that the EMT-based way of explanation doesn't miss the fact that I solve the problem together with *A*, insisting that cognitive processes could be shared, and that a symbol manipulation could be my cognitive process *and A*'s *one* at the same time. However, this reply is unhelpful. For, in order to explain why I cooperate with *A*, we must admit that some of the cognitive processes that are carried out to solve the problem are *unshared* by me. Suppose, for example, that I ask *A* to write down a certain mathematical formula on a blackboard. The best way to explain why I do so is to admit that citing this formula is required to solve the problem, but I lack the knowledge of it. In this way of explanation, the knowledge of the formula is supposed to be no part of my cognitive capacity, and the process of exercising it to write down the formula is supposed to be no part of my cognitive process. This is what EMT denies. Thus, my objection holds. EMT cannot explain cases of group problem-solving appropriately.

The same point can be applied to cases of tool use, too. To see this, let's consider: why do we usually solve complex arithmetic problems through calculation by writing using a

pen and a piece of paper? The standard answer in psychology of tool use says that it is because, by using these tools to create external symbols, we can *offload* cognitive work onto the environment (cf. Hutchins, 1990; Norman, 1993; Dennett, 1996). First, since the set of symbols functions as an information-storing resource, we don't need to remember intermediate results: our memory load is reduced. Second, since the set of symbols functions as an attention-guiding resource, we don't need to think, but can immediately see what to do next: our computational load is reduced. This shows that we can *divide cognitive labor* [Hutchins 1995] with tools (as well as with other agents). On the one hand, subtasks such as *motor control* and *perceptual processing* are borne by us. On the other hand, subtasks such as *storing intermediate results* and *guiding one's attention* are borne by symbols on the paper. So, among the whole problem-solving task, only a part of subtasks can be thought of as accomplished through one's cognitive processes. Keeping this point in mind, let's consider the case where I solve an arithmetic problem through calculation by writing using a pen and a paper. Even in this case, there turns out to be a division of cognitive labor among me, the pen, and the paper. I don't solve the problem alone, but together with the pen and the paper. Therefore, we should not regard the whole calculation process carried out by me, the pen, and the paper as my cognitive process.

In short, EMT mistakes what each of us achieves *together with others or tools* for something achieved *by each of us alone*. I want to stress that, by making this error, EMT makes it incomprehensible *why we cooperate with each other and why we use tools*. We rely on others or tools, because our cognitive capacities (such as those for memory or attention) are limited. EMT makes this fact invisible to us, since it overestimates human individuals' cognitive capacities by admitting that these capacities are partly supported by

environmental resources.

For these reasons, I judge that EMT is unpromising. It's true that EMT looks radical, but being radical is not a theoretical advantage. Its proponents fail to show that EMT is a better theory than internalism. Moreover, we can question whether EMT is truly radical enough. Doesn't it leave any deeper point unexamined? In the following, I will consider this question through comparing EMT with Dewey's view of the locus of mind.

2. DEWEY ON THE LOCUS OF MIND

2.1 IS DEWEY A POINEER OF EMT?

The proponents of EMT often mention Dewey as an early advocate of EMT. It's true that Dewey repeatedly criticizes the Cartesian view that mind is in the head. In this regard, he is in line with the spirit of EMT. He says, for instance, 'the older dualism of soul and body has been replaced by that of the brain and the rest of the body' [Dewey 1916/2004: 322]. This comment anticipates Noë's criticism against internalism I quoted in the last section. To take another example, many theorists [e.g. Clark 2008; Gallagher 2013; Vaesen 2014] cite the following passage from Dewey's *Essays in Experimental Logic* as an evidence that he endorses something like EMT.

> Thinking, or knowledge getting, is far from being the armchair thing it is often supposed to be. The reason it is not an armchair thing is that it is not an event going on exclusively within the cortex…. Hands and feet, apparatus and appliances of all kinds are as much a part of it [thinking] as changes in the brain. Since these physical operations

> (including the cerebral events) and equipments are a part of thinking, thinking is mental, not because of a peculiar stuff which enters into it or of peculiar non-natural activities which constitute it, but because of what physical acts and appliances *do*: the distinctive purpose for which they are employed and the distinctive results which they accomplish. [Dewey 1916/1958: 9, original emphasis]

In this passage Dewey claims that thinking involves body organs and environmental instruments. Moreover, he does so on the basis of two ideas that are similar to the ones that invite many contemporary theorists to endorse EMT. One of them is 'functionalistic psychology', which identifies thinking in terms of its purpose, i.e. problem solving, rather than some peculiar stuff or a non-natural essence. Dewey holds that anything counts as a participant in thinking as far as it contributes to solving problems. This resembles Clark & Chalmers' 'parity principle', which says: 'If, as we confront some task, a part of the world functions as a process which, were it to go on in the head, we would have no hesitation in accepting as part of the cognitive process, then that part of the world is [……] part of the cognitive process' [Clark & Chalmers 1998: 8].[viii] The other idea is 'instrumentalism', i.e. the position that rejects the epistemic/practical dichotomy, and views cognition as a tool for controlling the relationship between organism and environment. Dewey emphasizes that we often solve problems through active engagement with the environment. This anticipates contemporary cognitive scientists' suggestion that there are 'epistemic actions' [Kirsh & Maglio 1994], i.e. actions that enable us to transform problems so that they can be solved in easy, quick, or reliable ways. The EMT theorists [e.g. Clark & Chalmers 1998;

Menary 2007] hold that the existence of these actions supports EMT: according to these theorists, epistemic action is a kind of extended cognitive process.

However, on my reading, Dewey should not be regarded as a proponent of EMT. I find two crucial points on which Dewey would disagree with the EMT theorists: first, Dewey doesn't think at all that mind has some boundary; second, he denies that mind primarily belongs to individual agents. In the following subsections, I will explicate these points in turn.

2.2 THE UNBOUNDED MIND

For Dewey, mind has some locus, but it has no boundary. Godfrey-Smith makes this point as follows:

> Clark & Chalmers think that the routine use of notebooks, smartphones and the like motivates a view in which some of these devices are seen as inside, not outside, the mind itself. They accept a view in which boundaries exist somewhere, and their response to the cognitive role of these tools is to extend the boundaries of mind outward. I think that Dewey sees a relocation of the boundary as the wrong response. It is central to Dewey's outlook that the entanglement between mind and the rest of nature brought about by communicative technologies is local and constrained, but not in a way that involves a boundary, either standard or unorthodox, between the two. [Godfrey-Smith 2014: 288]

For this reason, Dewey's view should be characterized as

'the unbounded mind', rather than the extended mind. His answer to the question 'where does the mind stop, and the rest of the world begin?' is simply 'nowhere'. In contrast, the proponents of EMT (such as Clark) share with internalists the assumption that the boundary that divides the mind and the world exists, and then, contra internalists, claim that it can lie somewhere outer than skull and skin. They don't take into account the possibility that the boundary of mind simply doesn't exist[ix]. Now, from where does this divergence between Dewey and those who assume the existence of the boundary originate? Godfrey-Smith doesn't try to answer this question. So I try it by myself.

The answer to this question is concerned with what Dewey's overall project aims at. Dewey is a well-known naturalist. However, he does not intend to solve the mind-body problem by locating mind into a certain region of the physical world, but instead to 'do away with' [Dewey 1929/1958: xiv] it. He is committed to a *non-physicalistic* (more specifically, *neutral-monistic*) kind of naturalism, according to which nature is not a thing that would be ultimately determined by physics. Rather, it is something that should be revealed in various ways of inquiry and as various phases of the 'growth-process' [ibid.: 275]. This process exhibits three phases: (1) 'the physical', which is the trait of non-purposive activities; (2) 'the psycho-physical' or biological, which denotes the trait of purposive activities characterized by 'need-demand-satisfaction' cycle; (3) 'the mental', which designates the trait of meaningful activities involved in linguistic communication. He tries to 'naturalize' (and thus demystify) the mind through ensuring the *continuity* between matter, life, and mind. The distinction between them is nothing but 'the one of levels of increasing complexity and intimacy of interaction among natural events' [ibid.: 261].

It is important to note here that Dewey's naturalistic world-view is *process-based* rather than entity-based [cf. Johnson 2010]. For this reason, Dewey conceives of neither mentality nor materiality as kinds of entities, but both as forms of *activities*. He makes this point when he says:

> That to which both mind and matter belong is the complex of events that constitute nature. This becomes a mysterious *tertium quid* [third entity], incapable of designation, only when mind and matter are taken to be static structures instead of functional characters. [ibid.: 75]

Therefore, he urge us to replace the use of nouns such as 'mind' and 'matter' by the use of adjectives and adverbs such as 'mental' or 'mentally' and 'material' or 'physically'. In this metaphysical world-view, mind is not simply 'in the head'. Nevertheless, it is not 'extended' in the sense of being located inside a certain spatial region of the physical world. Dewey opposes dividing the reality into regions of entities, each of which is spatially isolated from each other. Instead, he seeks to restore the 'functional link' between different phases or aspects of nature.

> To see the organism *in* nature, the nervous system in the organism, the brain in the nervous system, the cortex in the brain is the answer to the problems which haunt philosophy. And when thus seen they will be seen to be *in*, not as marbles are in a box but as events are in history, in a moving, growing never finished process. [ibid.: 295, original emphasis]

Now we are in a position to understand what Dewey's

project aims at. For him, inquiring 'where the mind is' is tantamount to asking how the mind takes place in the growth of nature that crosses divisions of biology and culture, of individuals and groups, and of the inner and the outer. What matters is not drawing a boundary between mind and world, but identifying the link between the mental and the non-mental. In this way, Dewey's view of the locus of mind is part of a naturalization project that is quite different from that of EMT theorists, and hence it cannot be easily introduced into the physicalistic framework that the EMT theorists (or most of contemporary theorists in general) adopt.

However, by bringing Dewey's position into view, we discover a deeper point concerning the locus of mind. The truly radical antithesis to Cartesianism turns out not to be the view that mind is extended into the world, but instead the one that rejects the division between mind and world itself. In this regard, EMT might not be radical enough to undermine the dominance of Cartesianism.

2.3 SOCIAL MIND AND INDIVIDUALIZED MIND

Next, I will articulate Dewey's view of the locus of mind in detail. His concise statement about this topic is found in the following passage from his *Experience and Nature*:

> Domination by spatial considerations leads some thinkers to ask *where* mind is. …[A]ccepting for the moment the standpoint of the questioner (which ignores the locus of discourse, institutions and social arts), limiting the question to the organic individual, we may say that the "seat" or locus of mind—its static phase—is the qualities of organic action, as far as these

> qualities have been conditioned by language and its consequences. [Dewey 1929/1958: 291]

In this way, Dewey holds that mentality is localized in biological activity (or 'organic action' in his words) from which it emerges. Two points should be noted here.

First, Dewey claims that biological activity is a 'transaction' between organism and environment. He expresses this idea as follows:

> Life denotes a function, a comprehensive activity, in which organism and environment are included. Only upon reflective analysis does it break up into external conditions—air breathed, food taken, ground walked upon—and internal structures—lungs respiring, stomach digesting, legs walking. [ibid.: 9]

> [……] living as an empirical affair is not something which goes on below the skin-surface of an organism: it is always an inclusive affair involving connection, interaction of what is within the organic body and what lies outside in space and time [……]. [ibid.: 282]

> 'Whatever else organic life is or is not, it is a process of activity that involves an environment. It is a transaction extending beyond the spatial limits of the organism. An organism does not live *in* an environment; it lives by means of an environment. [……] The processes of living are enacted by the

> environment as truly as by the organism; for they *are* an integration' [Dewey 1938/1986: 32, original emphasis].

As expressed in these passages, Dewey holds that biological activity involves the environment: life is basically transactive[x]. Given this, and given that mind is localized where life is, mind also turns out to be transactive: it is a way of interaction between organism and environment.

Second, for Dewey, mind is continuous with life *without being identical with it*. His principle of continuity states that activities of thinking (or 'inquiry' in his word) 'grow out of organic activities, without being identical with that from which they emerge' [ibid.: 26]. The following two statements account for how mind differs from life:

> 'Mind denotes the whole system of meanings as they are embodied in the workings of organic life' [Dewey 1929/1958: 303].

> 'Meanings do not come into being without language, and language implies two selves involved in a conjoint or shared undertaking' [ibid.: 299].[xi]

The word 'meaning' is used to designate *the way activities have significant effects on other (possible) activities*. The upshot of Dewey's points is that mental activities differ from mere biological activities in that they are conferred meanings through being involved in linguistic communication. Therefore, he says:

> 'As a matter of fact every individual has grown up, and always must grow up, in a social medium. His responses grow

> intelligent, or gain meaning, simply because he lives and acts in a medium of accepted meanings and values. [……] Through social intercourse, through sharing in the activities embodying beliefs, he gradually acquires a mind of his own' [Dewey 1916/2004: 283].

More briefly, '[m]ind is [……] a function of social interactions' [Dewey 1929/1958: xiii].

Now we come to a crucial point in which Dewey's view diverges from EMT: in Dewey's view, mentality does not belong primarily to individual agents. Rather, it is primarily attributed to *communicative activities and performances* in which multiple agents participate. Recall the bracketed note in the passage I quoted at the beginning of this section. There Dewey suggests that, as well as individual organisms' action, products of interpersonal activities such as 'discourse, institutions and social arts' are candidates for loci of mind. Each of these products is a *system of meanings* shared in some community, and hence they are qualified as mental. Thus, unlike the proponents of EMT, Dewey doesn't hold that *individual agents'* mental activities are constituted by the social environment. Rather, he claims that no mental activity is owned by some individual agent from the outset. It is absurd, he says, to think that any thought or experience is primarily owned by someone, as well as to think that a house is primarily owned by someone.

Nevertheless, he admits that an individual agent is capable of having a mind: mind is sometimes appropriated by individuals in a derivative way [cf. Johnson 2010; Godfrey-Smith 2014]. Then, how does the appropriation occur? Dewey answers to this question as follows:

> In first instance and intent, it is not exact nor

> relevant to say "I experience" or "I think". "It" experiences or is experienced, "It" thinks or is thought, is a juster phrase. [……] To say in a significant way, "*I* think, believe, desire," instead of barely "*it* is thought, believed, desired," is to accept and affirm a responsibility and to put forth a claim. It does not mean that the self is the source or author of the thought and affection nor its exclusive seat. It signifies that the self as a centred organization of energies identifies itself (in the sense of accepting their consequences) with a belief or sentiment of independent and external origination. [Dewey 1929/1958: 232-233, original emphasis]

There Dewey claims that the appropriation of mind is a matter of *responsibility*. An activity of experiencing or thinking is appropriated by an individual agent, when the agent is responsible for it, in other words, when the agent is capable of identifying the activity as his own and of accepting its consequences. This happens, once again, when language enter the picture: 'Through speech a person dramatically identifies himself with potential acts and deeds' [ibid.: 170]. We should notice here that each of us can communicate *with himself* or *herself* in the form of inner speech (or 'soliloquy' in Dewey's word). Hence, besides interpersonal (or person-tool) activities of communication, *intra*personal ones qualify as mental, too. Thus, Dewey admits that the mental can be appropriated by individual agents as a result of 'internalizing' [Vygotsky 1934/1986] linguistic symbols that are originally used for communication. Mind is thus individualized owing to language, though it is primarily a social phenomenon.

3. TOWARDS SOCIALLY DISTRIBUTED COGNITION

Is Dewey's conception of mind still viable today? I think not. His view has a certain defect and requires some modification. I will suggest that the 'socially distributed cognition theory' offers a key idea for such modification.

The defect in question is found in Dewey's view of (non-human) animal mind. He says, '[i]t is safe to say that psychic events, such as are anything more than reactions of a creature susceptible to pain and diffuse comfort, have language for one of their conditions' [Dewey 1929/1958: 169]. It follows from this that non-linguistic animals (and pre-linguistic children) don't have minds. Indeed, Dewey explicitly affirms this consequence. He concedes that they feel: their activities are coloured by certain felt qualities. However, these qualities are said to be not meaningful: their activities make no significant difference to other (possible) activities. For this reason, Dewey claims that they don't have minds.

At this point, he falls into *anthropocentric chauvinism*. As Godfrey-Smith [2014] points out, contemporary psychology shows that many non-linguistic animals modify their behaviours on the basis of their past experiences and so exhibit something more than reactions to stimuli. This fact is the evidence that their experiences are meaningful in Dewey's sense. Therefore, it should be admitted that non-linguistic animals have minds, too. Moreover, given the continuity between human beings and other animals, only a part of our mental items should require language. Thus, Dewey's conception of mind turns out to be too restricted. Mind surely has a base layer that Dewey doesn't recognize.

In my view, what Dewey conceives of as 'mind' should be identified with what is called 'cognition' in the *socially distributed cognition theory* (SDCT) proposed by Hutchins

and developed by Giere among others. Hutchins limits the use of the term 'cognition' to designate symbol manipulation, and he claims that cognition in this sense is social and cultural in nature. According to his SDCT, any system which generates intelligent behaviours through symbol manipulation is regarded as a cognitive system, so that, in addition to individual agents, 'socio-cultural systems' such as human groups and human-tool systems qualify as cognitive in their own rights. The scope of such systems ranges from human-pen-paper systems and human-computer systems to ship navigation teams [Hutchins 1990] and the Hubble telescope system [Giere 2006]. Therefore, 'cognition' as defined in SDCT has a meaning that is quite different from 'mind' as used in ordinary situations. Latour [1996] indicates this point in his comment on Hutchins [1995], by saying, '[according to SDCT] cognition has nothing to do with minds nor with individuals, but with the propagation of representations through various media' [ibid.: 55]. Likewise, Giere [2006] states that 'we should resist the temptation to ascribe full agency, including having a mind, to distributed cognitive systems' [ibid.: 112].

SDCT denies that cognition is (always) in the head, and hence it has often been conflated with EMT. However, there is a substantial difference between them: while EMT attributes extended cognitive processes to individual agents, SDCT attributes them to socio-cultural (or 'distributed') systems.[xii] Hutchins makes this point when he offers an account for the case of calculation by writing. He says, '[……] when the symbols are in the environment of the human, and the human is manipulating the symbols, the cognitive properties of the human are not the same as the properties of the system that is made up of the human in interaction with these symbols' [Hutchins 1995: 361]. Thus, for example, in the case where I solve an arithmetic problem through calculation by writing, my cognitive properties are

different from the whole system composed of me, pen, and paper: The process of manipulating symbols in the environment is, though qualified as a cognitive process, not attributed to me, but to the me-pen-paper system as a whole.

Because of this, SDCT succeeds in capturing a fact EMT fails to do: the fact that we usually accomplish cognitive tasks together with other agents or instruments. It captures this fact in terms of division of cognitive labor among the distributed cognitive system. According to SDCT, each distributed cognitive system accomplishes cognitive tasks through interaction among multiple actors, and each of us is nothing but one of these actors. Instruments, as well as other agents, can be regarded as co-actors that help our cognitive task performances. In this regard, the environment is said to be 'one's partner or cognitive ally' [Hollan, Hutchins & Kirsh 2000: 192], rather than a part of one's own mind. This conception of environmental contribution enables us to understand why we rely on environmental resources. When we confront complex cognitive tasks, we usually rely on tools and other agents. However, the moral we should derive from this fact is not that *our cognitions are sometimes extended into the environment*, but that *our cognitions are usually complemented by other actors' support*. We manage to produce rich cognitive achievements, not because each of us has great cognitive capacities partly realized by environmental resources, but instead because the environment is full of co-actors to cooperate with. Although our cognitive capacities are quite limited, our problem-solving behaviors in large part are not produced by each of us alone.

SDCT fits very well with Dewey's conception of cognition: Both of them recognize that higher cognitive activities are primarily social. Moreover, both of them do so while avoiding the individualistic dogma to which EMT is

committed. Thus, when it is reconstructed so that its scope is limited to a certain class (higher, symbolic class) of the cognitive, Dewey's view looks to be promising. Indeed, there is room for and prospect of incorporating Dewey's insight into SDCT. Although SDCT is proposed as a general framework for cognitive phenomena, its proponents rarely explicate the relationship between socially distributed (interpersonal or person-tool) cognition and individual (intrapersonal) one[xiii]. Thus, understanding *how these two sorts of cognition are related with each other* and *how individual cognition emerges from socio-cultural interactions among multiple actors* remains a future task. Dewey's theory of appropriation I introduced in the last section, which invokes responsibility for activities and internalization of symbols in order to account for the appropriation of mind, might serve this purpose.

Then, what difference will be made when we incorporate the idea of Dewey and SDCT theorists into cognitive science? Will it promote our understanding of cognition? Among internalists, there are some theorists [e.g. Rupert 2009] who oppose (not only EMT, but also) SDCT. Against them, however, I want to claim that SDCT offers a *unified* way of explaining intelligent behaviours: it enables us to explain the same kind of explananda (i.e. intelligent behaviours) by appealing to the same kind of explanans (i.e. cognitive states or processes)[xiv]. For example, given that an intrapersonal symbol-manipulating process and a socially distributed one (such as those involved in calculation by writing) result in the same sort of problem-solving behaviors, why should we treat them in different ways by regarding only the intrapersonal one as cognitive? From Dewey's and the SDCT theorists' view point, the internalist way of explanation is *ad hoc*, in the respect that it tries to explain the same sort of intelligent behaviors in different ways.

CONCLUSION

So far I have tried to show that Dewey's view on the locus of mind indicates a possible kind of anti-Cartesianism (though it requires a certain modification). I don't deny that it looks somehow exotic from the contemporary perspective. Especially, I have no idea how promising his radical project of naturalization, which is based on non-physicalistic and process-based metaphysics, is. However, rather than pursuing this point further, I want to stress here that we can learn something from him. I will mention two morals we can get. First, we should realize that the boundary of mind question is not necessarily basic. Those who regard Dewey as a pioneer of EMT overlook the possibility that this question is dissolves by rejecting an underlying assumption: the existence of the boundary itself. The EMT theorists should account for (or, at least, be aware of) the reason why they still accept this assumption while arguing against internalism. Second, we should think, as Dewey and the SDCT theorists do, that higher cognitive activities do not primarily belong to individual agents. They are social phenomena in which multiple actors participate.

In concluding, I propose that, if you are unwilling to accept the Cartesian picture of the mind, you should overcome the error to regard human cognitive activities as individualistic. My consideration reveals that EMT commits this error in common with Cartesianism. Dewey's philosophy of mind encourages us to reconsider the place of individual mind in human cognitive activities and performances.

NOTES

[i]An exception among the proponents of EMT is Chalmers [1996], who is explicitly against physicalism.

[ii]In fact, the EMT theorists disagree on the scope of EMT: some [e.g. Clark & Chalmers 1998] claim that only *non-conscious* mental items are extended, while others [e.g. Noë 2004] insist that *conscious* ones are extended, too; some [e.g. Clark & Chalmers 1998] claim that both mental *states* and *processes* are extended, while others [e.g. Rowlands 2010] hold that mental *processes* alone are extended.

[iii]There are many versions of the position called the 'extended mind': (1) The functionalist version, which individuates mental states and events in terms of their functional (or computational) roles, and permits these roles to be played in part by the environment [e.g. Wilson 1994, 2004; Clark & Chalmers 1998; Clark 1997, 2008; Wilson & Clark 2009; Wheeler 2010]; (2) The so-called 'second wave' version of EMT, which identifies cognitive processes as manipulations of certain structures, and admits that these structures may be external as well as internal [e.g. Rowlands 1995, 2010; Menary 2007; Sutton 2010]; (3) The enactivist version, which regards perceptual experiences as a kind of skill-based actions, and holds that the environment participates in those actions [e.g. Hurley 1998, 2010; Noë 2004, 2009; Gallagher 2013]. Among enactivists, there are some [e.g. Thompson & Varela 2001; Thompson & Stapleton 2009; Di Paolo 2009; Hutto & Myin 2013] who don't formulate their positions as versions of vehicle externalism. I don't classify their positions into EMT.

[iv]Though the EMT theorists rarely state explicitly *who* the subjects of putative extended mental states or processes are, we can find in their writings some clues which suggest that (at least some of) the subjects in question are individual agents (including humans). For example, Clark & Chalmers [1998] mention an Alzheimer patient ('Otto') as a subject of putative extended beliefs, and obviously the patient is an individual human agent. Likewise, Menary [2007] opposes the picture of cognition that assumes a 'pre-existing cognitive agent', and claims that cognitive agents (which, I guess, include individual agents) are made up by internal resources and external ones which are integrated in the completion of cognitive tasks [ibid.: 63]. We might add Noë, because he proposes a version of vehicle externalism that are concerned with conscious experiences, and each subject of conscious experience is supposed to be an individual agent.

[v]An obvious functional difference between the inner information flow and the extended one is that, unlike the former, the latter is always mediated by action and perception (at least in cases of normal, non-

cyborg agents), and this seems to be relevant because mental states and processes are reasonably thought to be individuated partly in terms of their causal relations to perception and action. Indeed, we might argue that this difference between the inner information flow and the extended one is crucial, since it is natural to think that any information that requires action and perception to be accessed is not in mind. For example, if someone must make a certain action in order to retrieve some information, it should be because he or she doesn't remember the information.

[vi]The question which one is superior between the hypothesis of extended cognition and the hypothesis of *embedded* cognition is one of the hottest topics in the boundary of mind debate. For an important examination of it, see Rupert [2004] and Sprevak [2010]. For a relevant consideration, see the note 14 in this paper.

[vii]Here I use the word 'individualism' to denote the tendency to explain our behaviours exclusively in terms of individual cognition. The version of internalism to which the EMT theorists are committed is extreme in that it tries to explain *even those behaviours that are achieved through cooperation or tool-use* in individualistic terms.

[viii]In fact, there is a fundamental difference between Dewey's functionalistic psychology and 'functionalism' that underlies the parity principle: the former is inspired by Darwinian evolutionary biology, whereas the latter is inspired by computationalist cognitive science.

[ix]For example, Clark's commitment to the existence of the boundary of mind is found in the so-called 'trust and glue' conditions he proposes (*reliable availability*, *easy accessibility*, *automatic endorsement*, and *conscious endorsement in the past* [Clark 1997: 217; Clark & Chalmers 1998: 17]). These conditions are meant to determine whether an external information resource constitutes someone's mental states or not. Thus, it turns out that we can delineate the boundary of someone's mind by applying these conditions.

[x]Dewey's claim that not only mind but also life is not bounded by skin is remarkable, because most of the EMT theorists deny this. For example, when Clark says that mind is made up of biology and technology, he assumes that biological life is confined inside skin (in cases of normal, non-cyborg humans). As an exception among the proponents of EMT, Ingold [2011] explicitly endorses the view that life is unbounded. As I see it, Ingold's metaphysical world-view bears a close resemblance to Dewey's one.

[xi]Dewey uses the term 'language' to mean a broader range of things than spoken and written language. In his terminology, 'it includes also not only gestures but rites, ceremonies, monuments and the products of industrial and fine art. A tool or machine [……] *says* something, to those

who understand it, about operations of use and their consequences' [Dewey 1938/1986: 51-52, original emphasis].

[xii]Whereas Giere is clear about the distinction between EMT and SDCT, Hutchins is not. However, Hutchins criticizes Clark for not paying enough attention to 'cultural practices', or '*the things people do in interaction with one another*' [Hutchins 2011: 440, original emphasis].

[xiii]Though Giere [2006] makes clear the distinction between individual cognition and socially distributed cognition, he offers no further account of the relationship between them. Hollan et al. [2000] suggest that 'we can use the concepts, constructs, and explanatory models of social groups to describe what is happening in a mind' [ibid.: 177], but they provide no detailed explication of this topic.

[xiv]This consideration in terms of *explanatory unification* has been mentioned by the EMT theorists as an advantage of the hypothesis of extended cognition over that of embedded cognition. For example, Chalmers says, '[E]xtended states can function in explanation in very much the same way that beliefs function, and they should be regarded as sharing a deep and important explanatory kind with beliefs. This explanatory unification is the real underlying point of the extended mind thesis' [Chalmers 2008: xiv]. However, though it's true that this consideration gives us a convincing reason to admit that *there are non-internal cognitive processes*, it offers no reason to think that *individual agents' cognitive processes are extended*. Therefore, we cannot justify EMT on the basis of explanatory unification.

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